

US DEPARTMENT OF AGRICULTURE
FOREST SERVICE

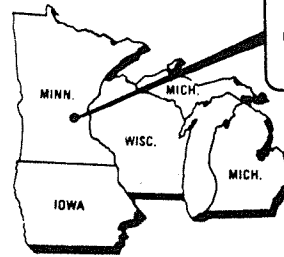


Northeastern Area
State & Private Forestry
FOREST PEST MANAGEMENT

Report No. S-72-7

November, 1972

5220



US FOREST SERVICE
NA - S&PF - FIELD OFFICE
FEDERAL BLDG. - US COURT HOUSE
316 ROBERT ST.
ST. PAUL, MINN. 55101

Oak Defoliation on the Manistee N.F. and
Adjacent Forest Lands in Lower Michigan - 1972

By Glen Erickson, Arthur Hastings
and Harvey Toko

Introduction

During the last outbreak (1956-58) of late summer defoliation, 45,000 acres of oak were reported affected at its peak in 1957. In the current outbreak beginning in 1970, approximately 160,000 acres of oak type were severely defoliated (Map 1). In 1971, defoliation by the same insect complex affected a total of 609,000 acres. Of this **gross** area, 300,000 acres of oak type were severely defoliated (80-100%), and about 100,000 gross acres had moderate to severe defoliation (50-80%) (Map 2). The outbreak has continued and this report is of the situation in 1972.

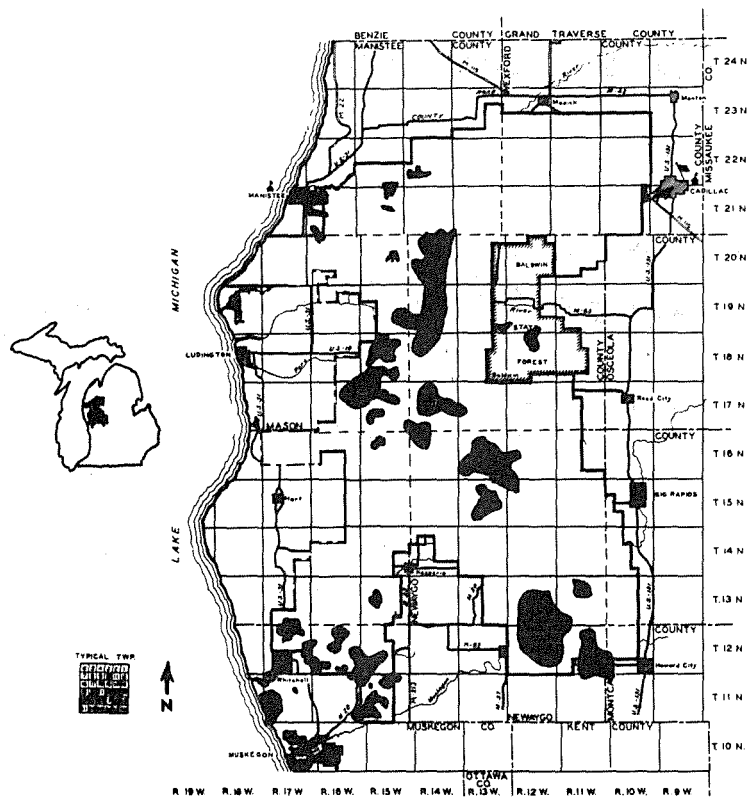
Causal Agents

The primary species responsible for the oak defoliation is the Red-humped oakworm, Symmerista canicosta Franc. Other species associated with the defoliation are the Variable Oak Leaf Caterpillar, Heterocampa mantel (Dbldg.) and the Post Oak Locust, Dendrotettix quercus Pack. These latter species occur in very low numbers compared to S. canicosta and only in small localized areas.

Methods

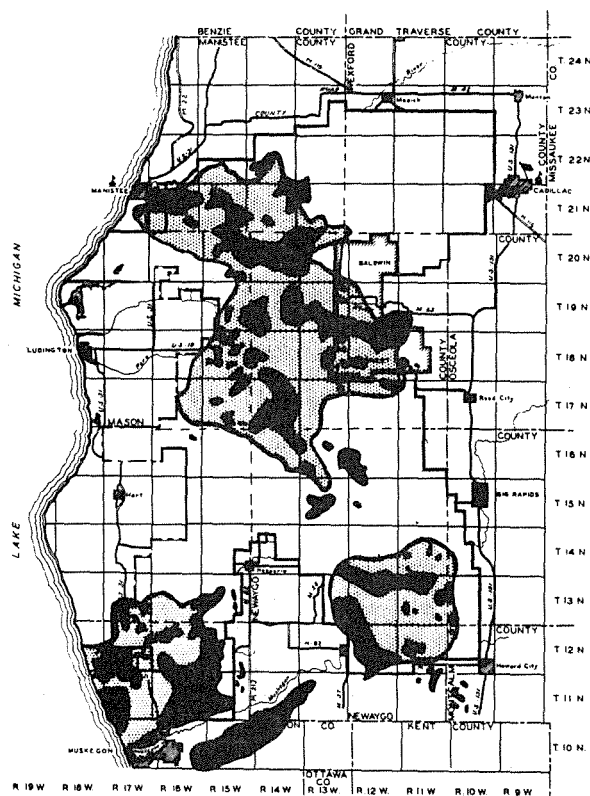
The aerial survey was flown October 3, 1972 by G. Erickson, FPM, St. Paul and J. Benz, Cadillac R.D. The flights were in a north-south direction, in parallel lines six miles apart, at 1000-2000 feet above the ground, at 120 m.p.h. While sketch mapping the areas of visible defoliation, the extent of severe defoliation (80-100%) was delineated. Ground checks were made on October 4-5, 1972.





Map 1. Oak Defoliation - 1970

■ Severe

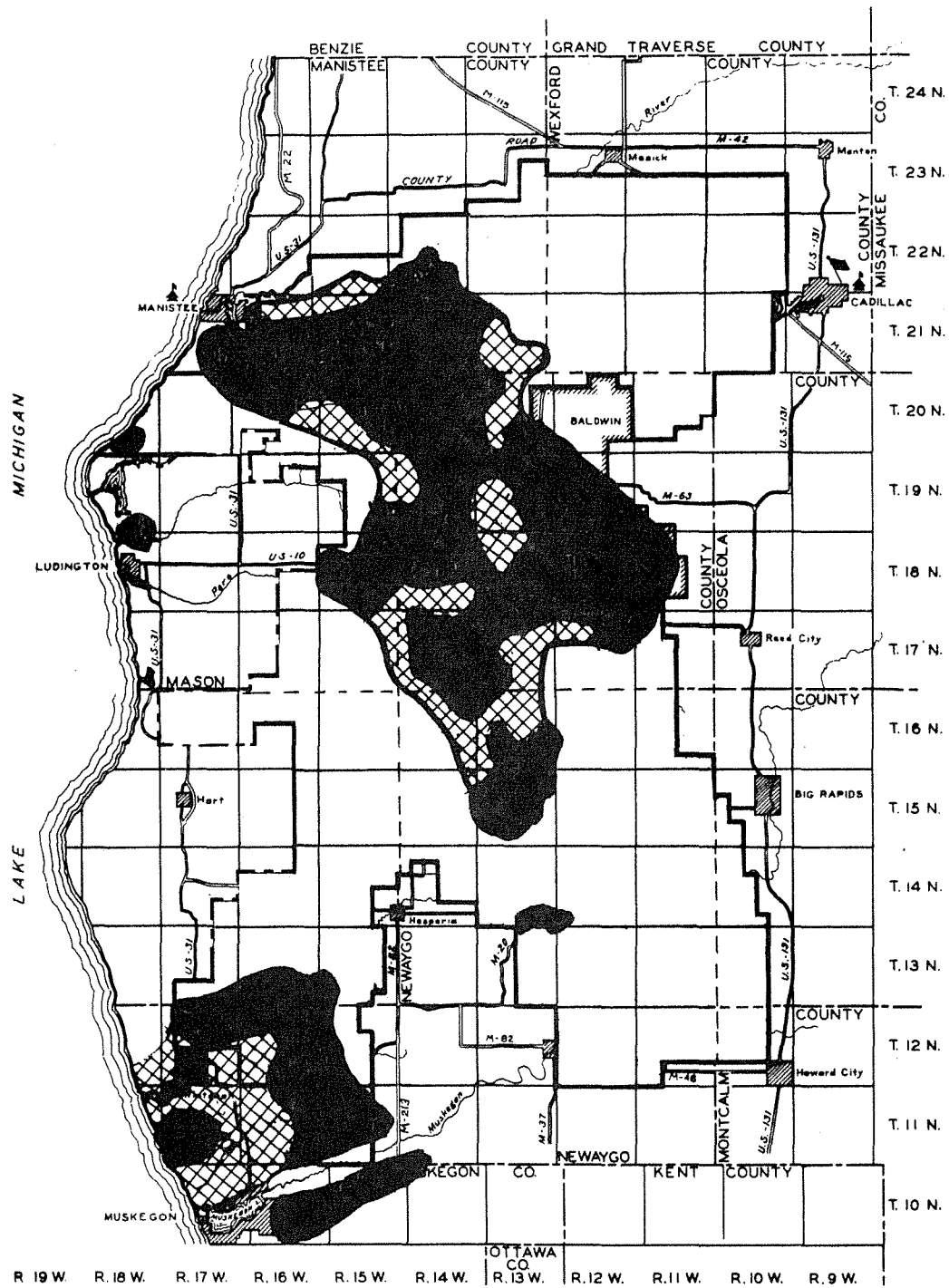


Map 2. Oak Defoliation - 1971

■ Severe

▨ Moderate to Heavy
(Scattered)

MANISTEE NATIONAL FOREST



Map 3. Oak Defoliation - 1972

- Heavy to Severe
- Moderate to heavy
(Scattered)

TYPICAL TWP.

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36



Results

The surveys in 1972 (Map 3) show a small decrease in the total overall outbreak to 587,000 acres (1971 - 609,000 acres). This decrease is most evident in the Hardy Dam area (T.12,13,14N; R.11,12W) where the population has collapsed. The gross area of severe defoliation **increased (1971 - 300,000 acres)** to 392,000 acres and 196,000 of moderate to severe defoliation (1971 - 100,000 acres). These acreages include non-forest and non-type areas. No data are available as to the non-federal ownership of oak type acreages within the area of infestation. The Manistee National Forest shows 250,000 acres of oak type within its ownership.